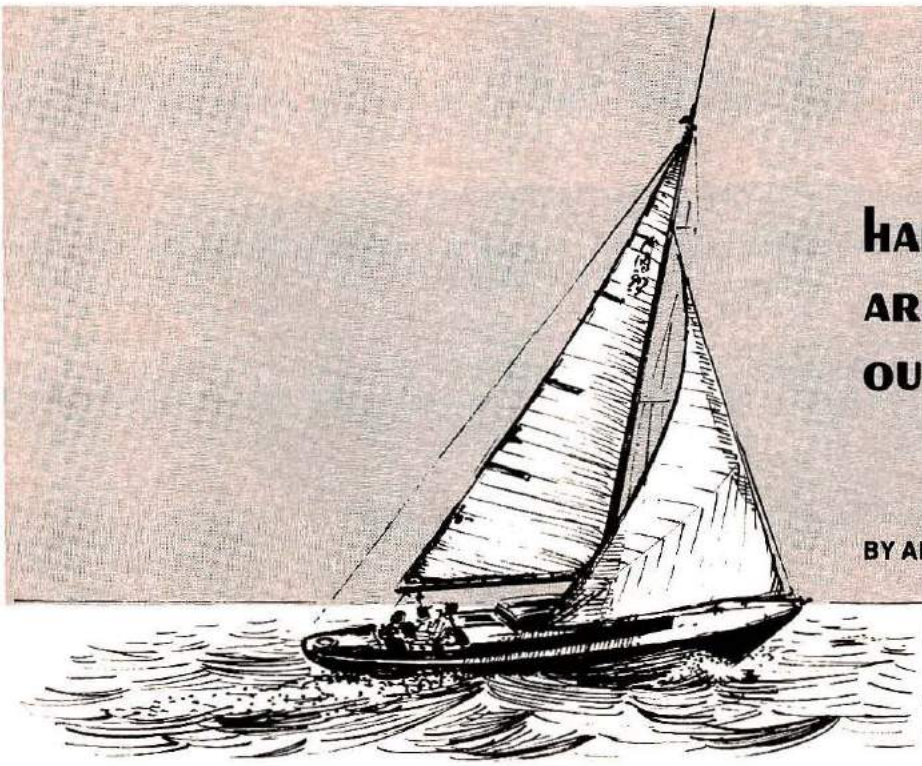


HAM RADIO SAILORS ARE NEVER OUT OF TOUCH

BY ANTHONY R. CURTIS, K3RXK

In fair weather, or foul, an Amateur Radio Station aboard your vessel is Bon Voyage

Ham radio operators in the southeastern corner of the United States were relaxing on a quiet Sunday afternoon last June, chatting with friends around the world and handling routine messages from hams aboard sailboats and ships thousands of miles away at sea in the Atlantic and Caribbean. Suddenly, an inexperienced-sounding voice on the air cried, "Mayday! Mayday!"

Quickly responding, hams learned that the yacht *Honeybee*, two days out of the Virgin Islands bound for the States, was in trouble. The captain had suffered a fatal heart attack, five landlubbers were aboard, and the vessel was rolling badly in heavy seas. Hams called the Coast Guard and activated Amateur Radio stations WB4SQJ at Miami and WB5KTY at New Orleans.

Following the terrified voices of *Honeybee* passengers on the 14-MHz ham band, direction-finding stations were able to pinpoint the exact location of the yacht. WB4SQJ and WB5KTY gave *Honeybee's* passengers careful step-by-step instructions, finally getting the boat turned around and headed for the nearest landfall on Grand Caicos Island.

A Canadian ham, listening in on the emergency from all the way out in British Columbia, switched to a different frequency in the 14-MHz ham band, made a call, raised George Thompson, operator of Amateur Radio station VP5GT on Grand Turk Island, and brought him over to the *Honeybee's* frequency. Familiar with both islands, VP5GT recommended bypassing the difficult anchorage at Grand Caicos and sailing on to Grand Turk where an easier landing could be made in the morning.

The drama continued through that Sunday night into Monday with a dozen Amateur Radio stations taking active part in the emergency communication. Hundreds of others stood by, monitoring the *Honeybee's* progress. The yacht's passengers, able only to use ham-radio gear, were connected (phone-patched) by hams into the United States telephone lines for calls to their families. They were also phone-patched to the sailboat's owner, the operator of ham station K2PSO, who had planned ahead for just such an emergency when he left a ham transmitter and receiver aboard *Honeybee*. He had left the rig tuned to 14.313 MHz where hams talk everyday with *maritime mobile* amateur radio stations at sea. The owner had instructed the novice crew to "turn it on and yell for help" if they got into any serious trouble. That made the rescue possible.

Fewer than 20 hours after the passengers sent the first *Mayday* call, VP5GT talked the *Honeybee* into Grand Turk harbor. Scores of hams in America breathed sighs of relief and tumbled into their racks for much-needed sleep.

As I bobbed along the Bay swells about 2300 GMT one evening last June and rested after a lengthy day-cruise, Rutger Webber, G5ANV, came back to my general call of

"CQ." Rutger, a member of the Hilbre, England, Yacht Club, was in the midst of a major Trans-Atlantic race to the Azores. He was on a rest break while under sail during the race.

Rutger and I talked for more than an hour and a quarter until 0017 GMT when he had to return to duty on deck. His signal from thousands of miles away across the Atlantic was loud and clear throughout. During our conversation, I learned that he grows strawberries near his Cornwall home, and that he works for the Commodore of the local yacht club.

The two greatest benefits of Amateur Radio afloat were wrapped up in that conversation with Rutger: Relaxation and safety. He was able to get away from stress to rest awhile. Clearly, if his crew had found trouble off France or Portugal, help could have been summoned easily through the ham gear aboard the racing yacht. If necessary, I could have used my radio equipment to span the miles back to Europe for help.

More drama on the high seas

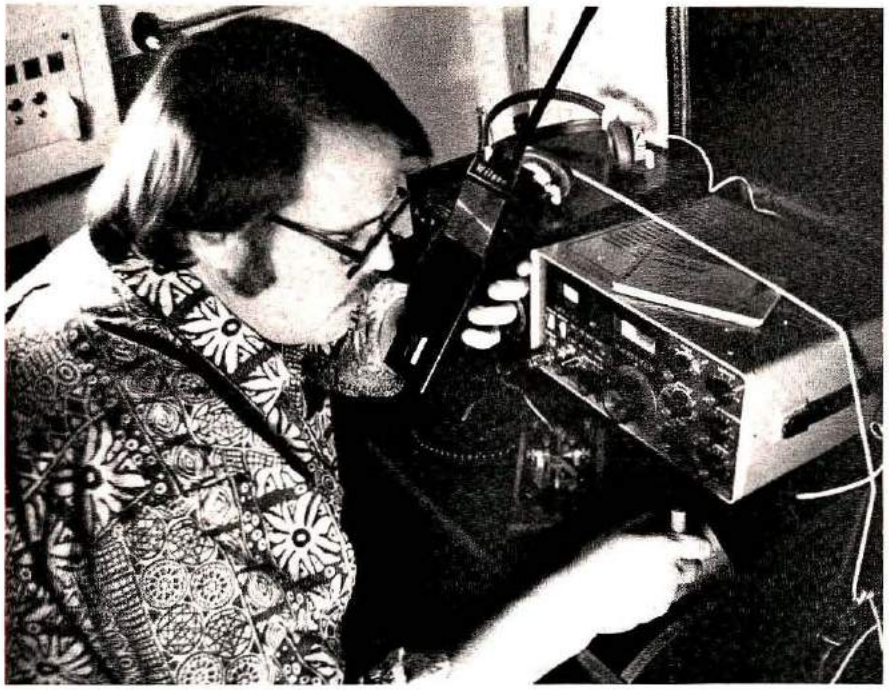
In another recent incident, the 36-foot sailboat *Aburab*, owned by the Costa Rican operator of Amateur Radio station TI8FAG, was 200 miles west of Ecuador in the Pacific Ocean when a passenger came down with what appeared to be appendicitis.

TI8FAG fired up his ham rig on the 14-MHz Amateur band and contacted a ham radio club station at Fort Clayton, Canal Zone. The Canal Zone rescue center was notified, and dispatched C-130E aircraft with a surgeon and two paramedics aboard. Alan Biddle, operator of WA4SCA, Jacksonville, Fla., flew as co-pilot and radio operator of the C-130. Using the ham frequencies, WA4SCA was able to locate the *Aburab*. The paramedics were dropped to successfully treat the patient.

Not long ago, the *Kluanne*, a 31-foot Canadian sloop, was in distress off South Carolina's Atlantic coast. The operator of ham station VEØMCM aboard the sloop broke into a Sunday morning on-the-air-chat on the 4.0-MHz ham band between Earle Taylor, WA4CFX, Spartanburg, S. C., and a Florida station. They were joined by retired Coast Guardsman John Price, WB4JNK, Southport, N. C., who coordinated rescue efforts with the Coast Guard and the Federal Communications Commission (FCC).

The FCC officially declared the *Kluanne's* frequency available for use only in that emergency, since Amateur gear was the communications equipment available on the *Kluanne*. Sixty hams helped out on the air. Some 14 hours after

They may be masts to most yachtmen, but to an amateur radio operator they are also antenna supports. If you'll look close you can see an "egg" insulator in the backstay, near the top of the mast on K3RXK's *Freelance* (center foreground). A vhf whip antenna is located at the top of the mast, out of the picture in this view.



K3RXK checks into one of the nearby vhf repeaters through a hand-held transceiver. Because of the excellent location of repeaters, they can be reached by low-powered units operating near the water level at a range of several miles. The larger equipment on the desk is for use on the amateur hf bands, either voice (ssb) or Morse code.

initial contact with WA4CFX, the Coast Guard cutter *Reliance* was alongside *Kluanne*, and rescued its crew by sunset.

Operating a ham station aboard a boat or ship is easy; many amateurs do it every day. Saving life, limb, and property are obvious uses. Less obvious may be the countless hours of pleasure and relaxation, sprawling in a cabin or sunning on a deck, talking with friends near and far.

I spent six weeks last summer aboard my sailboat *Freelance*, sailing out of Annapolis, Maryland, on the Chesapeake Bay. From late May to early July, my nights were punctuated by the excitement of contacts with Willy in Ghent, Belgium; Joe on Swan Island; Bob in British Columbia; Joe in France; Vic in Grenada, Spain; Art in Munich, Germany; Leo in the Ukraine, USSR; Odon in Brazil; Elvio in Rome; Pat in Helsinki; Sam in Pointe-a-Pitre, Guadeloupe; George in Australia, and many, many more Amateur operators.

These conversations ranged from 10-minute exchanges of signal and weather reports to two-hour chats about local culture, sight-seeing opportunities, politics and other thought-provoking topics. My contacts were spiced by having a fellow yachtsman on the other end.

Talking with other boatmen who are not in distress is a great pleasure. I chatted with HP9XCD who, with his wife and two daughters, was aboard the 32-foot sailboat *Teachers Pet III* which, by his reckoning, was 450 miles north of Venezuela and 900 miles east of the Panama Canal. We didn't talk long, however, as he was looking for a western United States ham station to telephone friends back home.

Amateur radio is there when needed

Hams help anybody they can, not just private yachts. The 990-foot container vessel *Delta Mar* recently collided with the Liberian tanker *Alkus* 90 miles out of Galveston. The *Delta Mar* took heavy hull damage; its regular communications gear was knocked out. Bill Pearce, *Delta Mar's* radio officer and operator of his own ham station W0MWO at Pueblo, Colorado, called for help on the 7.0-MHz ham band. John Carlson, WA7SAU, Tucson, Arizona, and Bob Warriner, W5TT, Arlington, Texas, responded immediately.

W5TT, himself a former seafarer, took over relay chores for messages to the Coast Guard and to the *Delta Mar's* owners, while dozens of other hams stood by. After finally docking the *Delta Mar*, her captain telephoned W5TT to say, "Thank God for hams."

You'll find hams everywhere

A ham radio station aboard a boat can provide contact with just about any spot in the world. I regularly talk from *Freelance* to nearby hams in Maryland, Delaware, and Virginia as easily as with the continents of Europe, Africa, Asia, or Australia. In fact, during my recent six-week vacation, I chatted with hams in all 50 of the United States and on five continents. Of special interest to wanderers on the waves, most of the Caribbean Islands, including most out-of-the-way places like Cayman Island, Swan Island and even Serrana Bank, sometimes have active hams on the air.

Helpful hams at U. S. military bases seem to be everywhere including Gamboa, Canal Zone; San Jose, Costa Rica; and

Distance Conversions

31 feet	9.5 meters
32 feet	9.75 meters
36 feet	11 meters
990 feet	302 meters
10-15 miles	16-24 kilometers
50 miles	80.5 kilometers
90 miles	145 kilometers
150 miles	241 kilometers
200 miles	322 kilometers
450 miles	724 kilometers
900 miles	1448 kilometers

many other locations. There are hundreds of thousands of amateur radio operators in all walks of life around the globe.

Which radio should you have aboard?

Three kinds of two-way radio systems are available to boatsmen: Ham radio, Marine radio, and Citizens' band (CB) radio. Each system is distinctly different, and each requires a separate FCC license. Ham radio has many features that complement marine radio, while holding great advantages over CB radio.

Amateur radio

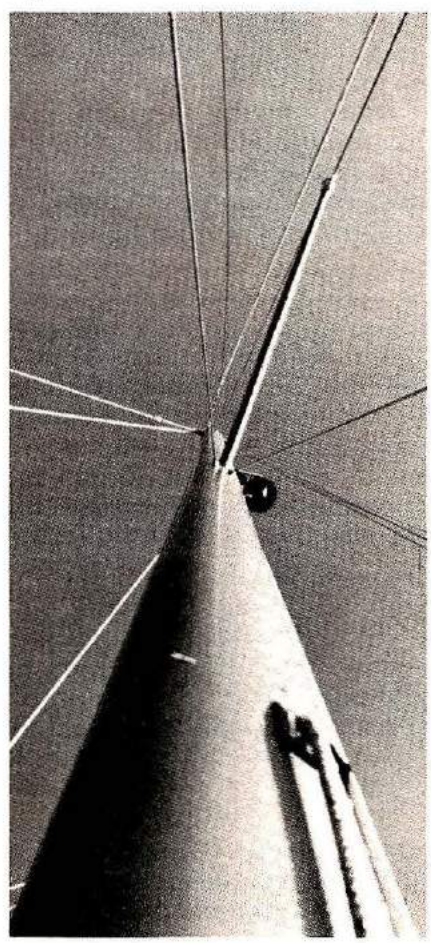
Hams use many different bands of frequencies in the radio spectrum, including short-wave, very-high-frequency (vhf), and ultra-high-frequency (uhf), bands that provide communications ranging from across a marina to across the world, any time of day or night. If they wish, Amateurs may operate transmitters with power up to 1000 watts into very elaborate signal-boosting antennas, and may indulge in chit-chat on any subject except money-making business matters. And, best of all for sailors, many Coast Guard stations have ham clubs monitoring for emergency calls on the Amateur frequencies.

Citizens' band radio

CB radios, on the other hand, are legally limited to only one short-wave band, and no vhf or uhf bands. A maximum permitted power input of 5 watts, somewhat restricted antennas, and a communication range limited to 150 miles, drastically curtails their usefulness. In practice, maximum communications range usually is not more than the equivalent of a few city blocks, and not more than about 10-15 miles in open countryside. The Coast Guard does not monitor or use CB radios.

Marine radios, of course, are monitored by the Coast Guard. The Marine Radio Service has two bands available for small boats: a 2-MHz short-wave band for use far offshore on the high seas, and a 156-MHz band for short-range contacts in and near harbors. Marine transmitter power on the 2-MHz band is limited to 150 watts: 30 times the power of CB sets. Meanwhile, the Amateur Radio power limit of 1000 watts is seven times greater than the marine radio power limit. The small ham short-wave radio I use aboard *Freelance* operates on six different short-wave bands and runs 140 watts. Marine radios on the vhf short-range band are limited to 25 watts, while hams enjoy a 1000-watt limit at vhf also.

The line going to the left from the top of the mast is really a backstay, insulated so that it can be used as an antenna for the high-frequency band amateur equipment aboard. The bottom end of the stay has another insulator, and is fastened near the transom area behind the steering wheel.



Marine radio

Boats outfitted for the 2-MHz marine band use antenna and ground systems similar to those used by hams operating in the six short-wave bands, and boats outfitted for the 156-MHz marine radio vhf band use antennas similar to vhf ham antennas.

Casual conversations are outlawed on the marine bands, so ham radio provides a back-up for vhf Marine Radio when a yachtsman is within line-of-sight-of shore, and for the 2-MHz Marine Radio when one is not too far offshore on "blue water." Ham radio also provides communication from points beyond the range of Coast Guard stations, and has the ability to reach directly to friends and relatives from thousands of miles away. The distance and reliability of Amateur Radio make CB radios seem mere toys.

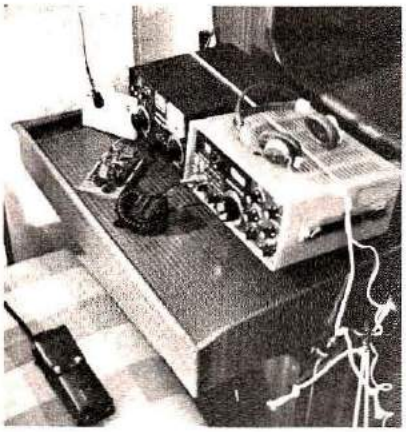
Ham radio is versatile

CB and Marine Radio Operators make only voice transmissions, whereas hams use voice plus International Morse code, television, facsimile, radioteletype and other, exotic, modes of communicating. Besides having great fun tapping out the dots and dashes of Morse code, hams know that code can be heard through static crashes which obliterate voice transmission.

Also much less power is required to get a code message through than is needed for a similar voice message, and a weak code signal can often be copied when a weak voice transmission is only an unintelligible whisper.

Licenses

It's not hard to get FCC licenses for any of these two-way radio services. Marine and CB licenses are yours when you complete an application form and plunk down the



The microphone and key are ready, the Amateur hf-band rigs are tied down in case of rough water, and the small vhf rig on the seat is ready to be clipped to a belt. Thus equipped, the *Freelance* is set for a weekend cruise with communications aboard for enjoyment or emergency.

required fee. Because it carries lots of extra advantages, the ham license requires passing a simple test of your knowledge of radio operating, FCC rules and the International Morse code.

The Federal Communications Commission makes licenses available to anyone passing the exam, regardless of age, sex, or nationality. U.S. citizenship is not required. Any person may take the exam and, if successful, receive Amateur Station and Operator licenses. Also, visitors from some other countries may operate Amateur stations here under reciprocal agreements between governments.

A good place to start

Paperback books giving questions and answers of the types asked on FCC exams are available from *Ham Radio Horizons* by calling toll-free (800) 258-5353 from 8 AM to 10 PM Eastern time Monday through Friday, and 8:30 AM to 4:30 PM on Saturdays. License manuals and study guides are available, along with code-practice tapes.

Learning the code is fun and not the stumbling block it might seem at first glance. Just last week, I talked on the air with a 12-year-old girl who had passed the ham-license exam and now is able to understand code sent at 15 words per minute. The beginning Novice-class license only requires sending and receiving five words per minute.

FM and repeaters

All CB and most marine radio communications are transmitted directly from one operator's set to another. Hams, on the other hand, have established a network of 2000 repeater stations across the United States, atop buildings, towers, and mountains, both inland and near seashores. Many other repeaters are in use in Canada and around the world.

Repeaters have very sensitive receivers and high-powered transmitters which pick up weak vhf voice signals and retransmit them over vast distances. Repeaters permit hams to talk far beyond the normal line-of-sight limitations on marine vhf radios.

Many Amateur operators have equipped their vhf radios with *Touch-Tone* telephone dials so they can make local telephone calls anytime to friends and authorities as if from an ordinary telephone. Police and other emergency services can be called from boat, car, or even deep in a forest. The telephoning ham need only be within range of a repeater.

I had an interesting conversation one evening last summer with Charlie, WA3RPU, as he was piloting the giant motorsteamer *Clipper* southbound in the large-ship channel of the Chesapeake Bay. Charlie had just left the port of Baltimore on his way down to Norfolk with a load of freight. We chatted for an hour before he passed out of range for direct boat-to-boat vhf communications. I was using only a small hand-held transceiver (transmitter and receiver in one box).

Freelance was rolling gently in her slip at Maryland Capital Yacht Club and I was relaxing on the port berth in the cabin with a cold *Diet Pepsi*. Saying goodbye to Charlie, I switched to a Baltimore repeater, and enjoyed a conversation with another sailor in his car 50 miles west of Baltimore on Interstate 70 heading for a weekend on the Bay. **HRH**

Glossary of Terms

Mayday is an International distress call, the voice equivalent of *SOS*; comes from French *M'aider* (help).

Landlubber is a person who is not used to sailing and ships.

Phone Patch is a device that can be connected between a radio and a telephone to permit telephone conversations to be sent and received by radio.

Paramedic is someone trained to give emergency medical treatment at the scene of a disaster or emergency.

Vhf is very high frequency, considered to be between 30 and 300 Megahertz.

Uhf is ultra-high frequency, considered to be between 300 Megahertz and 3 Gigahertz (3,000 Megahertz).

Blue water is an ocean or sea, as opposed to a lake or river; deep water.

Repeater is a transmitter and receiver combination, usually set up in a high, remote location, that automatically receives a signal, amplifies it, and re-transmits (repeats) it over a greater distance than would otherwise be possible.

Touch-Tone is a trade name by Bell Telephone Company for a push-button dialing system that produces a characteristic tone when a button is touched.